

CLAIMS

1. A liquid formulation comprising
 - a) a growth hormone, or a substance, which stimulates release or potentiates the activity of endogenous hGH;
 - 5 b) polyethylene-polypropylene glycol;
 - c) a citrate buffer; and
 - d) a stabilizer.
2. The formulation according to claim 1, wherein the growth hormone is human growth hormone.
- 10 3. The formulation according to claim 1, wherein the substance, which stimulates release or potentiates the activity of endogenous hGH, is growth hormone releasing hormone (GHRH).
4. The formulation according to any of the preceding claims, wherein the stabilizer is sucrose.
- 15 5. The formulation according to claim 4, comprising sucrose in a concentration ranging from 10 mg/ml to 100 mg/ml or 20 mg/ml to 80 mg/ml or about 60 mg/ml.
6. The formulation according to any of the preceding claims, comprising citrate in a concentration ranging from 1 to 100 mM or from 5 to 50 mM or from 10 to 20 mM.
- 20 7. The formulation according to any of the preceding claims having a pH in the range of 5 to 7 or 5.5 to 6.5 or about 6.
8. The formulation according to any of the preceding claims, comprising the polyethylene-polypropylene glycol in a concentration ranging from 0.5 to 5 mg/ml or 1 to 2 mg/ml or 1.5 mg/ml.
- 25 9. The formulation according to any of the preceding claims, wherein the polyethylene-polypropylene glycol is a pluronic polyol.
10. The formulation according to claim 9, wherein the pluronic polyol is pluronic F68.
11. The formulation according to any of the preceding claims further comprising a preservative.
- 30 12. A formulation according to claim 11, comprising the preservative in a concentration ranging from 1 to 10 mg/ml or 2 to 5 mg/ml or 3 mg/ml.
13. The formulation according to claim 11 or 12, wherein the preservative is phenol.

14. The formulation according to any of the preceding claims, said formulation having a pH of 5.9 and consisting of r-hGH, sucrose, Poloxamer 188, citric acid an/or citrate buffer and optionally water for injection.
- 5 15. The formulation according to any of the preceding claims, said formulation having a pH of 5.9 and consisting of r-hGH, sucrose, Poloxamer 188, citric acid, phenol and optionally water for injection.
16. A process for production of a liquid formulation according to any of the preceding claims comprising the step of preparing an aqueous solution of the components of (a) to (d).
- 10 17. A process for the production of a liquid formulation according to any of claims 1 to 15 comprising the step of placing a predetermined amount of the formulation into a sterile container.
18. A pharmaceutical composition comprising the formulation according to any of claims 1 to 15.
- 15 19. A form of presentation of the liquid formulation according to any of claims 1 to 13 hermetically closed in a sterile condition within a container suited for storage before use.